इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 1577 (2000): Tobacco and Tobacco Products - Cigarettes
[FAD 4: Tobacco and Tobacco Products]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 1577 : 2008

REAFFIRMED

भारतीय मानक

तम्बाकू और तम्बाकू उत्पाद — सिगरेट — विशिष्टि

(तीसरा पुनरीक्षण)

Indian Standard

TOBACCO AND TOBACCO PRODUCTS — CIGARETTES — SPECIFICATION

(Third Revision)

ICS 65.160

© BIS 2008

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 2008 **Price Group 3**

Tobacco and Tobacco Products Sectional Committee, FAD 4

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Tobacco and Tobacco Products Sectional Committee had been approved by the Food and Agriculture Division Council.

Cigarettes are manufactured under different brand names varying in the filler mixture used, the processing method employed, and the finish of the packing. More over, many imported cigarettes are now available in the Indian market as the import of cigarettes has been allowed since April 2000.

As the appreciation of any brand of cigarette depends on an individual's taste, it is difficult to lay down a fixed standard for cigarettes. However, an attempt has been in this standard to lay down certain minimum requirements, which would generally satisfy a smoker.

The standard was originally issued in 1960, revised in 1975 and in 1989 and amended in 1997. The third revision has been taken up in order to update the standard in the light of current industrial and trade practices. In this revision, the scope, limits of loose shorts, length, circumference, filling density and its measurement (*see* Annex D), tobacco blend composition and nicotine content have been modified. Definition of filling density and marking on retail package has been included.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TOBACCO AND TOBACCO PRODUCTS — CIGARETTES — SPECIFICATION

(Third Revision)

1 SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and testing of cigarettes being marketed in India.

1.2 This standard does not cover the requirements for flavour and aroma of cigarettes.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1070 : 1992	Reagent grade water — Specification (*third revision*)
5643 : 1999	Tobacco and tobacco products — Methods of test for tobacco (*second revision*)
10666 : 1983	Specification for cigarette filters
12942 : 1996	Methods of sampling for cigarettes (*first revision*)

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Cigarettes — Cigarettes shall be a filler mixture of fine cut tobacco and blend adjuncts wrapped in cigarette paper, with or without filter. The cigarette without filter is called 'Plain Cigarette' or 'Non-filter Cigarette' and the one with filter 'Filter Cigarette' or 'Filter Tipped Cigarette'.

The 'Plain' or 'Non-filter Cigarette' with overtipping at one end of the cigarette is called 'Tipped Cigarette'.

3.2 Loose Shorts — Mass of the filler mixture that has fallen off the cigarettes in the retail package due to either loose filling or during transit. These are expressed as percent by weight of a cigarette.

3.3 Filling Density — It is the amount of the filler mixture required to fill 1 cm^3 of the cigarette volume and is expressed as g or mg per cm^3 at 13.5 percent moisture content.

4 REQUIREMENTS

4.1 Description

The cigarettes shall be cylindrical or of any other shape. The cigarette cover shall be made from cigarette paper, the ends/sides of the paper are joined/stuck together by means of a harmless adhesive. The ends of the cigarettes shall be evenly cut. The cigarettes are manufactured in different lengths, circumferences and densities as per market requirements.

4.2 Length

The length of the cigarette shall be the distance in millimetres between the two ends of a cigarette when measured by the method prescribed in Annex A.

4.3 Circumference

The circumference of the cigarette shall be measured by the method prescribed in Annex B.

4.4 Filling Density of Smoking Filler Mixture

The filling density of smoking mixture in a cigarette shall be examined by the method prescribed in Annex C and Annex D.

4.5 Freedom from Mould Attack

The cigarette shall be free from any mould attack when examined by the method prescribed in **5** of IS 5643.

4.6 Freedom from Beetle Attack

The material shall be free from any tobacco beetle attack when examined by the method prescribed in Annex E.

4.7 Burning Quality

The cigarettes shall satisfy the test prescribed in Annex F.

4.8 Loose Shorts

Loose shorts will be measured by the method prescribed in Annex G.

4.9 Tobacco Blend

The tobacco blend used in the manufacture of cigarettes shall be of any, or many, of the following:

a) Various types/grades of tobacco; and
b) Blend adjuncts like cut or shredded midrib, reconstituted tobacco and expanded tobacco.

4.10 The material shall also conform to the requirements specified in Table 1.

5 MARKING

The following particulars shall be legibly and indelibly marked on each retail package in addition to the declarations as required under various statutory Rules and Regulations:

a) Name and address of the manufacturer;
b) Brand name;
c) Cigarette length;
d) MRP;
e) Number of cigarettes;
f) Date of manufacture or date code; and
g) **Statutory Warning** : 'Cigarette smoking is injurious to health' or any other warning in the manner in accordance with the provisions of the *Cigarettes (Regulation of Production, Supply and Distribution) Act*, 1975 or any other Act in force.

6 PACKING

The cigarettes shall be packed in retail packages and will carry appropriate and applicable markings as per **5**.

7 SAMPLING FOR TEST PURPOSES

The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in IS 12942 or as agreed to between the purchaser and the manufacturer.

8 TESTS

8.1 Tests shall be carried out as prescribed in **4.1** to **4.9** and Table 1.

8.2 The relative humidity shall be 65 ± 5 percent and the temperature 27 ± 2°C inside the laboratory where the tests are to be carried out as prescribed in **4.2**, **4.3**, **4.4** and at Sl No. (i) in Table 1.

9 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which effect the results of analysis.

Table 1 Requirements for Cigarettes

(*Clauses* 4.10, 8.1 *and* 8.2)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Annex of this Standard	Clause of IS 5643
(1)	(2)	(3)	(4)	(5)
i)	Width of tobacco shreds, mm	0.3 to 1.2	H	—
ii)	Loss on heating, percent by mass	8.0 to 18.0	—	4
iii)	Nicotine content, percent by mass (on dry basis), *Max*	3.5	—	6
iv)	Total ash, percent by mass (on dry basis), *Max*	25.0	—	8
v)	Acid-insoluble ash, percent by mass (on dry basis), *Max*	3.0	—	9

ANNEX A

(*Clause* 4.2)

DETERMINATION OF LENGTH OF THE CIGARETTE

A-1 PROCEDURE

Take 10 cigarettes of each brand and slit the cigarettes through a line parallel to the axis of the cigarette using a sharp blade and taking care to have a straight and clean cut. For the purpose, an electrically operated slitter could also be used. Remove the filler mixture carefully from the slit cigarettes and preserve the same for determination of filler mixture mass. Wet the cigarette paper spills individually with liquid paraffin, carefully removing the filter tip prior to doing so in case of spills from filter cigarettes. Measure the respective lengths, as applicable, to the nearest 0.5 mm (*see* Fig. 1 and Fig. 2), along the cut edge using a steel scale. A travelling microscope or any other suitable measuring equipment may also be used. Care shall be taken to ensure that no air bubble is present between the scale and the paper.

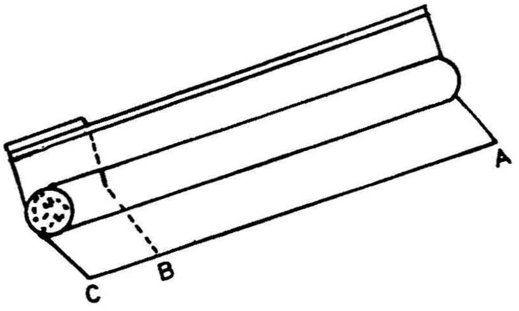

FIG. 1 PLAIN CIGARETTE

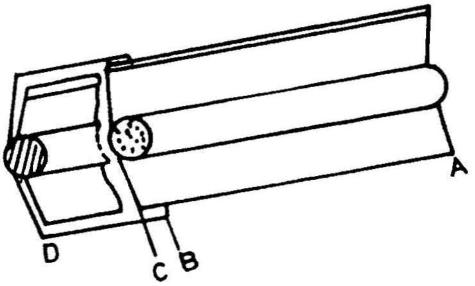

FIG. 2 FILTER CIGARETTE

A-2 CALCULATION

Calculate the average length as arithmetic mean of lengths of 10 paper spills recorded and express the result to nearest to 0.5 mm.

a) *Total Length* — Shortest length between the two ends of the cigarette, in mm.
   1) Plain cigarettes (*see* Fig. 1), and
   2) Filter cigarettes (*see* Fig. 2).

b) *Filter Plug* — Shortest length in mm between the two ends of (*see* Fig. 2).

c) *Tobacco Rod* — Shortest length in mm between the two ends of the cigarette containing tobacco in a filter cigarette (*see* Fig. 2).

d) *Tipping* — Length in mm between the two ends of the paper used for joining the tobacco rod and the filter plug in a filter cigarette (*see* Fig. 2).

e) *Overtipping* — Length in mm between the two ends of a tipping paper covering the tobacco rod portion in filter cigarette (*see* Fig. 2).

ANNEX B

(*Clause* 4.3)

DETERMINATION OF CIRCUMFERENCE OF THE CIGARETTE

B-1 PROCEDURE

B-1.1 Measure the width of each spill (*see* **A-1**) taking the same precautions. Measurements at two places, *A* and *B* near the ends as shown in Fig. 1 and 2 shall be taken. Use a magnifying glass for recording the width to the nearest 0.01 cm.

B-1.2 Calculate the circumference at the two ends (*A* and *B*; Fig. 1 and 2) separately. These values will be required for density determination (*see* Annex D).

B-1.3 Calculate the average circumference of the cigarette as the arithmetic mean of the widths *A* and *B* determined in **B-1.2**. These values will be used for reporting the circumference of a cigarette.

B-1.4 The circumference of cigarettes can also be measured by the method prescribed in Annex A of IS 10666.

ANNEX C

(*Clause* 4.4)

DETERMINATION OF WEIGHT OF FILLER MIXTURE

C-1 PROCEDURE

Weigh, on a tared dish, the mass of filler mixture from the 10 cigarettes collected (*see* **A-1**). Record the weight to the nearest 0.01 g.

C-2 CALCULATION

Calculate the arithmetic mean of the weights of filler mixture from 10 cigarettes recorded to the nearest 0.01 g.

ANNEX D

(*Clause* 4.4)

DETERMINATION OF FILLING DENSITY OF FILLER MIXTURE

D-1 CALCULATION

Calculate the filling density of the filler mixture at the received moisture content as follows:

$$\text{Filling density } (D),\ \text{g/cm}^3 = \frac{Q}{V}$$

where

Q = mass of filler mixture (*see* **C-2**), in g; and

V = volume of the cigarette in cc = $0.026\,5 \times L\,(A^2 + A \times B + B^2)$

where

L = length of the cigarette paper (*see* Fig. 1 and 2);

A = circumference at one end, in cm (*see* Fig. 1 and 2); and

B = circumference at the other end, in cm (*see* Fig. 1 and 2).

D-1.1 Filling Density at 13.5 Percent Moisture

Calculate the filling density of the filler mixture at 13.5 percent moisture content as follows:

$$D_{13.5}\ \text{g/cm}^3 = \frac{D \times (100 - M)}{86.5}$$

where

D = filling density, in g/cm^3 (*see* **D-1**); and

M = moisture content, percent by mass, of the filler mixture as received.

ANNEX E

(*Clause* 4.6)

EXAMINATION FOR FREEDOM FROM TOBACCO BEETLE ATTACK

E-1 PROCEDURE

E-1.1 Take 5 cigarettes and examine visually the surface for the presence of any borings by tobacco beetles. Cut open these cigarettes one by one on a clean white sheet of paper.

E-1.2 Examine the cut material carefully for the presence of tobacco beetle (*Lasioderma serrecorne*) in all its stages, that is, egg, larva, pupa and adult, whether alive or dead. Examine either visually or with the help of a hand lens (magnification 10X). In case a larger magnification is used, this shall be stated in the test report.

ANNEX F

(*Clause* 4.7)

TEST FOR BURNING QUALITY

F-1 PROCEDURE

F-1.1 Clamp a cork carrying a brass pin not more than 1 mm in diameter horizontally on an iron stand. The length of the pin projecting from the cork should be 15 mm.

F-1.2 Light the cigarette thoroughly by puffing for a few times and fix the cigarette on the pin through the non-lighted end of the cigarette, the pin piercing through the cigarette along its central axis. Maintain a distance of at least three millimetres between the cork and the cigarette. Place the assembly carrying the cigarette in draught free atmosphere, maintaining the horizontal position of the cigarette.

F-1.3 Ten cigarettes shall be examined for burning quality.

F-2 REPORT

The sample shall be deemed to have satisfied the test for burning quality, if all the cigarettes tested burn down continuously for 80 percent of their length.

ANNEX G

(*Clause* 4.8)

DETERMINATION OF LOOSE SHORTS

G-1 PROCEDURE

Carefully open retail packages and remove the cigarettes taking care that no loose shorts are adhering to the cigarettes. After removing the cigarettes, empty the packages on a clean sheet of paper and finally remove the bundling paper or foil tissue, if present, and recover loose shorts from these. Take separately the mass of the shorts collected and the mass of 300 cigarettes.

G-2 CALCULATION

$$\text{Loose shorts, percent by mass} = \frac{A}{B+A} \times 100$$

where

A = mass of loose shorts collected from 300 cigarettes, and

B = mass of 300 cigarettes.

ANNEX H

[*Table* 1, *Sl No.* (*i*)]

DETERMINATION OF CUT WIDTH OF TOBACCO SHREDS

H-1 APPARATUS

H-1.1 Microscope, equipped with a 10X objective and 10X eye piece.

H-1.2 Stage Micrometer

H-1.3 Eyepiece Micrometer

H-1.4 Glass Slides, as many as required.

H-1.5 Cover Slips, as many as required.

H-2 REAGENT

H-2.1 Canada Balsam

H-3 PROCEDURE

H-3.1 Mounting of Cut Tobacco Shreds

Cut open a few cigarettes and condition the tobacco of the cigarettes so that the shreds are flexible. Pick out 10 long shreds from the sample. Place them carefully over a clean glass slide and straighten them with a tight finger pressure and finally cover them with a cover slip.

H-3.2 Measurement

Introduce the eyepiece micrometer into the eyepiece of the microscope and calibrate it by using the stage micrometer. Measure the width of the individual tobacco shred using the eyepiece micrometer at four places. Express the results in terms of millimetres.

MGIPF—834 Deptt. of BIS/08—8-12-2008—300 Books

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc: No. FAD 4 (1702).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402

Telegrams: Manaksanstha
(Common to all offices)

Regional Offices:

		Telephone
Central :	Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern :	1/14 C. I. T. Scheme VI M, V. I. P. Road, Kankurgachi KOLKATA 700054	2337 4899, 2337 8561 2337 8626, 2337 9120
Northern :	SCO 335-336, Sector 34-A, CHANDIGARH 160022	260 3843 260 9285
Southern :	C. I. T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western :	Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches: AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.

Printed by the Manager, Govt. of India Press, Faridabad